WETLAND DETERMINATION DATA FORM - Great Plains Region

L3R Project/Site: City	Marsha //County:	all		2015-06-04 Sampling Date:	
Enbridge Applicant/Owner:		Min State:	nesota	w-156n46w34-d1 Sampling Point:	
ACM/KRG Investigator(s):		Section, Townsl	nip, Range:		
depression Landform (hillslope, terrace, etc.):			(concave, conv		_
Subregion (LRR or MLRA):	Latitude:	48.289300203	3 Longit	-96.54474925 ude:	
Minnesota State Plane North, NAD 83 Datum:	(2011) U.S. feet				
I24A Soil Map Unit Name:				PEMA NWI Classification:	
Are climatic/hydrologic conditions on the site typical	for this time of v	ear? (if no exnl	ain in Remarks	Yes	
No No No Are Vegetation, Soil, or Hydrology					
No No No No Are Vegetation , Soil , or Hydrology					
SUMMARY OF FINDINGS - Attach site map showi					
Υ	es			The reaction exp.	
	es	Is the Sam		Yes	
Hydric Soil Present?	 es	within a W			
Wetland Hydrology Present?		, , ,	onal Wetland Si	te ID:	
Remarks: (Explain alternative procedures here or in The wetland is a fresh wet meadow within a grazed		t.)			
The wetland is a fresh wet freddow within a grazed	pasture.				
VEGETATION Lise scientific names of plants					
VEGETATION - Use scientific names of plants.	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot Size:)	% Cover	Species?	Status	Number of Dominant Species	
1				That Are OBL, FACW, or FAC: 1 (A)	
2				Total Number of Dominant	
3.				1 Species Across All Strata:(B)	
4.				Percent of Dominant Species	
	0	= Total Cover		100 That Are OBL, FACW, or FAC:(A/B)	
Sapling/Shrub Stratum (Plot Size:)	<u>-</u>	- Total Cover		Prevalence Index worksheet:	
1				Total % Cover of: Multiply by:	
2				OBL species <u>0.00</u> x 1 <u>0</u>	
3				FACW species 82.00 x 2 164	
4				FACU species 20.00 x 3 48 UPL species 0.00 x 4 0	
5	0	= Total Cover		UPL species $0.00 \times 4 = 0$ Column Totals $114 \times (A) = 272 \times (B)$	3)
Herb Stratum (Plot Size: 5				Prevalence Index = B/A = 2.3859649	,
1. Juncus balticus	65.00	Yes	FACW	Hydrophytic Vegetation Indicators:	
2. Solidago gigantea	15.00	No	FAC	yes 1 - Rapid Test for Hydrophytic Vegetation	
3. Agrostis gigantea 4. Poa compressa	15.00	No	FACW	yes 2 - Dominance Test is > 50%	
4. Pod compressa 5. Equisetum arvense	5.00	No No	FACU	yes 3 - Prevalence Index is ≤ 3.0 ¹ 4 - Morphological Adaptations (Provide	
6. Taraxacum officinale	2.00	No	FACU	supporting data in Remarks or on a separate sheet)	
7. Viola nephrophylla	2.00	No	FACW	Problematic Hydrophytic Vegetation ¹	
8				(Explain)	
9				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
10				uniess distalbed of problemade.	
	114	= Total Cover			
Woody Vine Stratum (Plot Size:)		- Total Cover			
1.					
2.	· -				
	0	= Total Cover		1	
	<u> </u>	= Total Cover		Understade.	
% Bare Ground in Herb Stratum			Hydrophytic Vegetation		
				Present?	
Remarks: The wetland is dominated by Baltic rush.					
The Wettand is dominated by baltic rush.					
L					

Soil Sampling Point: w-156n46...

Depth	Matrix			Redox					
inches)	Color (moist)	%	Color	(moist)	%	Type ¹	Loc ²	Texture	Remarks
	10YR 2 1	95	7.5YR 3 4	(IIIOISL)	5	С	M	sicl	Remarks
			7.5YR 3 4						
·	10YR 3 1	86			2	<u>C</u>	М	sil	mixed matrix
12-18 .	10YR 4 3	_ 10	10YR 3 6		_ 2	<u> </u>	M	FS	mixed matrix, fine sand
_		_			_				
Type: C=Concenti	ration, D=Depletion, RM	1=Reduced N	//atrix, MS=M	asked Sand Gr	ains.				² Location: PL=Pore Lining, M=N
ydric Soil Indicate	ors:							Indicato	rs for Problematic Hydric Soil ³ :
Histosol (A1	L)			Sandy Gleyed	d Matrix (S4)		_ 10	m Muck (A9) (LRR I, J)
Histic Epipe				Sandy Redox				□ co	ast Prairie Redox (A16)(LRR K, L, R)
				Stripped Mat					rk Surface (S7) (LRR G)
Black Histic				* * *					
── Hydrogen S ──				Loamy Muck			K, L)	∟ Hi	th Plains Depressions (F16)
Stratified La	ayers (A5)			Loamy Gleye	d Matrix	(F2)		(LR	R H outside of MLRA 72 & 73)
1cm Muck ((A9) (LRR F, G, H)			Depleted Ma	trix (F3)			☐ Re	duced Vertic (F18)
Depleted Be	elow Dark Surface (A11)		✓	Redox Dark S	Surface (F	6)		Re	d Parent Material (F21)
Thick Dark 9	Surface (A12)			Depleted Da	rk Surface	e (F7)		☐ Ve	ry Shallow Dark Surface (TF12)
_	ky Mineral (S1)			Redox Depre					ner (explain in remarks)
¬ .				•					ier (explain in remarks)
	ky Peat or Peat (S2)(LRR	G, H)		High Plains D	epressio	ns (F16)		³ Indicat	ors of hydrophytic vegetation and
── 5cm Mucky	Peat or Peat (S3) (LRR F	=)		(MLRA 72	& 73 of	LRR H)			hydrology must be present, unless
			_					disturbe	d or problematic.
estrictive Layer (if	f present):	L							
Туре:								Hydric Soil Presei	+> Yes
								rryarie son i reser	
oil consists of silt	y clay loam over silt loar	n with redo:	x features thr	oughout. Soil I	meets hy	dric indica	tor F6.		
emarks: ioil consists of silt	y clay loam over silt loar	m with redox	x features thr	oughout. Soil I	meets hy	dric indica	tor F6.		
emarks: soil consists of silt IYDROLOG' Vetland Hydrol	y clay loam over silt loar					dric indica	tor F6.	<u>S</u>	econdary Indicators (minimum of two requi
emarks: oil consists of silt IYDROLOG' Vetland Hydrol	y clay loam over silt loar Y logy Indicators: ors (minimum of one		ed; check al			dric indica	tor F6.	<u>S</u>	econdary Indicators (minimum of two requi Surface Soil Cracks (B6)
emarks: Oil consists of silt IYDROLOG' Vetland Hydrol rimary Indicato Surface Wa High Water	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1)		ed; check al	l that apply)	!		tor F6.	<u>S</u>	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)
emarks: Oil consists of silt IYDROLOG' Vetland Hydrol rimary Indicato Surface Wa High Water	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) Table (A2)		ed; check al	Il that apply)	brates (B	13)	tor F6.	<u>Si</u>	Surface Soil Cracks (B6)
emarks: Oil consists of silt IYDROLOG' Vetland Hydrol rimary Indicato Surface Wa High Water	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) Table (A2) (A3)		ed; check al \$ #	Il that apply) ialt Crust (B11) Aquatic Inverte	brates (B	13) C1)	tor F6.	Si	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)
emarks: Oil consists of silt IYDROLOG' Vetland Hydrol rimary Indicato Surface Wa High Water es Saturation	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) r Table (A2) (A3) ks (B1)		ed; check al s # +	Il that apply) ialt Crust (B11) Aquatic Inverte Hydrogen Sulfid	brates (B de Odor (13) C1) (C2)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
emarks: Oil consists of silt IYDROLOG' Vetland Hydrol rimary Indicate Surface Wa High Water es Saturation Water Mari	y clay loam over silt loar Y logy Indicators: ors (minimum of one ster (A1) Table (A2) (A3) ks (B1) Deposits (B2)		ed; check al	Il that apply) ialt Crust (B11) Aquatic Inverte Hydrogen Sulfic ry-Season Wal	brates (B de Odor (ter Table spheres o	13) C1) (C2)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3)
emarks: oil consists of silt IYDROLOG' Vetland Hydrol rimary Indicato Surface Wa High Water es Saturation Water Marl Sediment D	y clay loam over silt loar Y logy Indicators: Ors (minimum of one oter (A1) Table (A2) (A3) ks (B1) Deposits (B2) Sits (B3)		ed; check al	Il that apply) ialt Crust (B11) Aquatic Inverte Hydrogen Sulfic ry-Season Wat	brates (B de Odor (ter Table spheres o	.13) C1) (C2) n Living Re			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled)
emarks: Oil consists of silt VPDROLOG' Vetland Hydrol rimary Indicate Surface Wa High Water Saturation Water Marl Sediment D Drift Depos	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) 'Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4)		S	Il that apply) ialt Crust (B11) iquatic Inverte dydrogen Sulfic ry-Season Wal Oxidized Rhizos there not tilled	bbrates (B de Odor (der Table spheres o l) duced Iro	.13) C1) (C2) n Living Re			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2)
emarks: Oil consists of silt VPDROLOG' Vetland Hydrol Fimary Indicato Surface Wa High Water Saturation: Water Mari Sediment D Drift Depos Algal Mat o Iron Deposi	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) 'Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4)		ed; check al	Il that apply) ialt Crust (B11) iquatic Inverte iydrogen Sulfii ry-Season Wat Oxidized Rhizos there not tillec	bbrates (B de Odor (ter Table spheres o I) duced Iro ace (C7)	.13) C1) (C2) n Living R0 n (C4)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
emarks: Oil consists of silty Vetland Hydrol rimary Indicate Surface Wa High Water es Saturation Water Mari Sediment D Drift Deposi Iron Deposi Water-Stai Inundation	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) ined Leaves (B9) Visible on Aerial Imager	e is require	ed; check al	Il that apply) Il that apply) In that crust (B11) In the control of the control In the control I	bbrates (B de Odor (ter Table spheres o I) duced Iro ace (C7)	.13) C1) (C2) n Living R0 n (C4)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) yes Geomorphic Position (D2)
IVDROLOG Vetland Hydrol rimary Indicate Surface Wa High Water Saturation Water Mari Sediment Do Algal Mat o Iron Deposi Water-Stai Inundation ield Observation	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) ined Leaves (B9) Visible on Aerial Imager ons:	e is require	ed; check al	il that apply) salt Crust (B11) Aquatic Inverte Hydrogen Sulfic ry-Season Wat Oxidized Rhizos there not tillec Presence of Re- Thin Muck Surf Other (Explain	bbrates (B de Odor (der Table spheres o l) duced Iro ace (C7) in Remari	13) C1) (C2) n Living Ro n (C4)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) yes FAC-Neutral Test (D5)
IVDROLOG Vetland Hydrol Fimary Indicate Surface Wa High Water Saturation Water Mari Sediment D Drift Depos Algal Mat o Iron Deposi Water-Stai Inundation ield Observatic	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) 'Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) ined Leaves (B9) Visible on Aerial Imager Ons: Present?	e is require ry (B7)	ed; check al	il that apply) ialt Crust (B11) iquatic Inverte dydrogen Sulfic ry-Season War oxidized Rhizos there not tillec resence of Rec thin Muck Surf Other (Explain	bbrates (B de Odor (der Table spheres o l) duced Iro ace (C7) in Remari	13) C1) (C2) n Living Ro n (C4)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) yes FAC-Neutral Test (D5)
Inundation ield Observatic Water Table Pres	y clay loam over silt loar Y logy Indicators: Ors (minimum of one of the (A1) Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) its (B5) visible on Aerial Imager ons: Present?	e is require	ed; check al	Il that apply) ialt Crust (B11) iquatic Inverte dydrogen Sulfic ry-Season Wat Dxidized Rhizos there not tillec Presence of Rec thin Muck Surf Dther (Explain Depth (inc	bbrates (B de Odor (der Table spheres o d) duced Iro ace (C7) in Remark	.13) C1) (C2) n Living Ro n (C4) ks)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) Yes FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
IVDROLOG Vetland Hydrol rimary Indicate Surface Wa High Water Saturation Vetland Mat o Drift Depos Algal Mat o Ivon Deposi Water-Stai Inundation ield Observatic urface Water Presaturation Prese	y clay loam over silt loar Y logy Indicators: Ors (minimum of one of the (A1) Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) its (B5) ived Leaves (B9) Visible on Aerial Imager ons: Present? esent? esent?	e is require ry (B7)	ed; check al	il that apply) ialt Crust (B11) iquatic Inverte dydrogen Sulfic ry-Season War oxidized Rhizos there not tillec resence of Rec thin Muck Surf Other (Explain	bbrates (B de Odor (der Table spheres o d) duced Iro ace (C7) in Remark	.13) C1) (C2) n Living Ro n (C4) ks)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) yes FAC-Neutral Test (D5)
Remarks: Soil consists of silt HYDROLOG' Wetland Hydrol Primary Indicato Surface Wa High Water Yes Saturation Water Marl Sediment D Drift Depos Algal Mat o Iron Deposi Water-Stai Inundation Field Observatic	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) 'Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) ined Leaves (B9) Visible on Aerial Imager Ons: Present?	e is require ry (B7)	ed; check al	il that apply) ialt Crust (B11) iquatic Inverte dydrogen Sulfic ry-Season War oxidized Rhizos there not tillec resence of Rec thin Muck Surf Other (Explain	bbrates (B de Odor (der Table spheres o l) duced Iro ace (C7) in Remari	13) C1) (C2) n Living Ro n (C4)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3 (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) yes FAC-Neutral Test (D5)
Remarks: Soil consists of silter HYDROLOG' Wetland Hydrol Primary Indicator Surface Wa High Water Yes Saturation I Sediment D Drift Depos Algal Mat o Iron Deposi Water-Stai Inundation Field Observation	y clay loam over silt loar Y logy Indicators: Ors (minimum of one of the (A1) Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) its (B5) ived Leaves (B9) Visible on Aerial Imager ons: Present? esent? esent?	e is require	ed; check al	Il that apply) ialt Crust (B11) iquatic Inverte dydrogen Sulfic ry-Season Wat Dxidized Rhizos there not tillec Presence of Rec thin Muck Surf Dther (Explain Depth (inc	bbrates (B de Odor (der Table spheres o d) duced Iro ace (C7) in Remark	.13) C1) (C2) n Living Ro n (C4) ks)			Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3 (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) Yes FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
HYDROLOGY Wetland Hydrol Primary Indicate Surface Wa High Water Saturation Drift Deposi Water-Stai Inundation Gield Observation Gurface Water P Water Table President Describe Record	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) ined Leaves (B9) Visible on Aerial Imager ons: Present? esent? ent? ent? iny fringe) ded Data (stream gat	ry (B7) No Yes Yes uge, monif	ed; check al	Il that apply) ialt Crust (B11) quatic Inverte dydrogen Sulfic ry-Season Wat Dxidized Rhizos there not tillec Presence of Rei Thin Muck Surf Dther (Explain) Depth (inc Depth (inc	bbrates (B de Odor (der Table spheres o l) duced Iro ace (C7) in Remari hes) 16 hes) 0	.13) C1) (C2) In Living Real (C4) In (C4) In (C4)	oots (C3)	Wetlar	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) Yes FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
wetarks: In the property of t	y clay loam over silt loar Y logy Indicators: Ors (minimum of one of the (A1) Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) visible on Aerial Imager Ons: Present? esent? ent? ury fringe)	ry (B7) No Yes Yes uge, monif	ed; check al	Il that apply) ialt Crust (B11) quatic Inverte dydrogen Sulfic ry-Season Wat Dxidized Rhizos there not tillec Presence of Rei Thin Muck Surf Dther (Explain) Depth (inc Depth (inc	bbrates (B de Odor (der Table spheres o l) duced Iro ace (C7) in Remari hes) 16 hes) 0	.13) C1) (C2) In Living Real (C4) In (C4) In (C4)	oots (C3)	Wetlar	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) Yes FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
HYDROLOGY Wetland Hydrol Primary Indicate Surface Wa High Water Saturation Drift Deposi Water-Stai Inundation Gield Observation Gurface Water P Water Table President Describe Record	y clay loam over silt loar Y logy Indicators: ors (minimum of one oter (A1) Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) sined Leaves (B9) Visible on Aerial Imager ons: Present? esent? ent? ary fringe) ded Data (stream gail stated to the surface.	ry (B7) No Yes Yes uge, monif	ed; check al	Il that apply) ialt Crust (B11) quatic Inverte dydrogen Sulfic ry-Season Wat Dxidized Rhizos there not tillec Presence of Rei Thin Muck Surf Dther (Explain) Depth (inc Depth (inc	bbrates (B de Odor (der Table spheres o l) duced Iro ace (C7) in Remari hes) 16 hes) 0	.13) C1) (C2) In Living Real (C4) In (C4) In (C4)	oots (C3)	Wetlar), if available:	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Yes Geomorphic Position (D2) Yes FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)